



## Kennedy Krieger Institute

*A comprehensive  
resource for children  
with disabilities*

December 4, 2006

BY HAND DELIVERY

Kevin J. Martin  
Chairman  
Federal Communications Commission  
445 12th Street, SW  
Washington, D.C. 20554

Re: Reply Comments  
ET Docket No. 06-135 & RM-11271

Dear Chairman Martin:

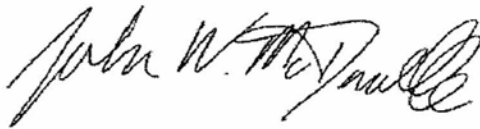
My name is Dr. John W. McDonald, M.D., Ph.D. and I am the Executive Vice President and Director of the International Center for Spinal Cord Injury. I support the Alfred Mann Foundation's ("AMF") request that the Commission adopt service rules and allocate up to 20 MHz of spectrum to accommodate new wireless wideband microstimulator devices on a secondary basis. At the International Center for Spinal Cord Injury, we are treating patients with a form of physical rehabilitation classified as activity-based restoration, termed functional electrical stimulation (FES) ergometry. It combines automated movements of nonfunctional or partially functional limbs with dermal stimulation of motor points (e.g., in hamstring and quadriceps) in areas below the level of injury. This approach provides the physical benefits of exercise and activates neural circuits left completely or partially silent due to SCI. For example, FES ergometry increases cardiovascular fitness and muscle tone and reduces the incidence of bowel and bladder complications. However, further research is needed to optimize stimulation in this setting. The use of the microstimulators provided by the AMF is critical to further our success. These stimulators are more versatile and reliable than our current models and will drastically improve our research on stimulation as a therapy for spinal cord injury. With these stimulators we may be able to uncover additional regenerative effects of FES in the injured spinal cord in addition to the physical attributes we are now seeing in the clinic.

The establishment of a service allocation is vital to the development of a new generation of wireless wideband medical devices designed to restore sensation and function to paralyzed limbs and organs. These devices offer a safer, less invasive, and more effective treatment option than is available with existing equipment.

The Commission's rules currently do not provide any spectrum to permit operation of new wireless wideband microstimulator devices. Although the Commission has allocated some

spectrum for medical telemetry operations and for medical implant communications services, this spectrum is not suitable for wideband medical implant devices that require larger bandwidths to perform more complex functions. Without adequate spectrum and service rules to support the operation of these innovative devices, millions of Americans will be deprived of a safe and effective medical treatment for their debilitating health conditions. The Commission's notice of inquiry issued in the above-referenced proceeding is an important first step toward adopting the necessary rules to encourage deployment of the next generation of wireless wideband microstimulator devices. The Kennedy Krieger Institute urges the Commission to continue its efforts in this area by expeditiously granting AMF's request for commencement of a separate rulemaking.

Sincerely,

A handwritten signature in cursive script, appearing to read "John W. McDonald".

John W. McDonald, M.D., Ph.D.  
Executive Vice President and Director  
The International Center for Spinal Cord Injury  
Associate Professor of Neurology and Physical Medicine and Rehabilitation  
The Johns Hopkins University School of Medicine

cc: Marlene H. Dortch  
FCC Secretary